

Application No.: 10/038,640
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Remarks/Arguments:

Introduction

Claims 1-3, 6, 14, 15, 17, 25, 52, 53, 55, 57-62, 64-68 and 72-93 are pending. Claims 4-5, 7-13, 16, 18-24, 26-51, 54, 56, 63 and 69-71 are canceled. Claims 1-3, 14, 15, 17, 25, 52, 53, 55, 57-62, 64-68 and 72-75 are withdrawn from consideration. Claims 6 and 76-93 are being prosecution on the merits.

Independent claim 6 is directed to a body insertable prosthesis, including: a body insertable tubular structure including at least one flexible strand selectively formed to provide a plurality of discrete first tubular segments and a plurality of discrete second tubular segments in an alternating sequence; wherein the first tubular segments and the second tubular segments have respective first and second nominal diameters when the tubular structure is in a relaxed state and wherein the tubular structure is radially compressible against an elastic restoring force to a predetermined diameter; wherein the at least one flexible strand further is selectively configured to provide first axial stiffness levels and first radial force levels along the first tubular segments, and second axial stiffness levels and second radial force levels along the second tubular segments, when said tubular structure is radially compressed to the predetermined diameter; wherein the first axial stiffness levels are higher than the second axial stiffness levels, whereby the second tubular segments, as compared to the first tubular segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular structure is deployed; wherein the at least one flexible strand includes a plurality of flexible strands helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, including respective first obtuse and second obtuse strand crossing angles along the first and second tubular segments, respectively; and wherein the second obtuse strand crossing angle is larger than the first obtuse strand crossing angle.
(emphasis added)

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Independent claim 76 is directed to a body insertable prosthesis, including: a body insertable tubular structure including a plurality of flexible strands selectively formed to provide a plurality of discrete first tubular segments and a plurality of discrete second tubular segments in an alternating sequence, wherein the flexible strands are helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, including respective first obtuse and second obtuse strand crossing angles along the first and second tubular segments, respectively, wherein the second obtuse strand crossing angle is larger than the first obtuse strand crossing angle; wherein the first tubular segments and the second tubular segments have respective first and second nominal diameters when the tubular structure is in a relaxed state, and the tubular structure is radially compressible against an elastic restoring force to a predetermined diameter; wherein the at least one flexible strand further is selectively configured to provide first axial stiffness levels and first radial force levels along the first tubular segments, and second axial stiffness levels and second radial force levels along the second tubular segments, when said tubular structure is radially compressed to the predetermined diameter; and wherein the first axial stiffness levels are higher than the second axial stiffness levels, whereby the second tubular segments, as compared to the first tubular segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular structure is deployed. (emphasis added)

Independent claim 84 is directed to a prosthesis insertable into body lumens with natural curvature, including: a body insertable tubular wall composed of a plurality of flexible strands helically wound in opposite directions to form multiple strand crossings defining obtuse strand crossing angles, and further incorporating a plurality of first tubular wall segments and a plurality of second tubular wall segments in an alternating sequence, the first and second tubular wall segments having respective nominal diameters when in a relaxed state and being radially compressible against an elastic restoring force to a predetermined diameter, wherein the obtuse strand crossing angles along the second tubular wall segments are larger than the obtuse strand crossing angles along the first tubular wall segments; wherein the first and second wall segments when radially compressed to the predetermined diameter have respective axial

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stiffness levels, with the first tubular wall segments having relatively high first axial stiffness levels, and with the second tubular wall segments having second axial stiffness levels lower than the first axial stiffness levels, whereby the second tubular wall segments, as compared to the first tubular wall segments, are adapted to more readily conform to a curvature of a body lumen in which the tubular wall is deployed. (emphasis added)

Thus, all of the presently pending independent claims recite a prosthesis comprising, *inter alia*, strands helically wound in opposite directions to form obtuse strand crossing angles.

Section 102 Rejections

Claims 6 and 76-93 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,575,818 to Pinchuk (hereinafter “Pinchuk”). The examiner alleges that any angle, i.e., the circumferentially and/or longitudinally extending angles, of the crossing wires of Pinchuk may read on the subject claims, as follows:

The applicant has amended independent claims 6,76 and 84 to recite that the obtuse crossing angle of the second tubular wall segment is larger than the obtuse strand crossing angle along the first tubular wall segment. The applicant is relying on the fact that the labeled angle θ in Fig. 4 [of Pinchuk] shows an angle that is not obtuse. However, as shown in the attached figure above, if one angle is less than 90 degrees, then the adjacent angle will be more than 90 degrees.
The examiner is interpreting this adjacent angle as the “obtuse strand crossing angle of the first tubular wall segment”. The applicant has not cited any structural limitations that presents interpreting this “adjacent angle” as the “crossing angle”. Therefore, the examiner could choose any crossing angle for either the first or second tubular structures. (Office Action dated April 4, 2007, page 4, paragraph 5) (emphasis added)

Applicant respectfully traverses.

Pinchuk is directed to a stent 400 having a first braided body portion 403 formed from wire elements 408 with a braiding angle of less than 90°, as follows:

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Turning to FIG. 4, a first embodiment of the endovascular stent 400 of the invention is shown. The stent 400 includes a plurality of cross-helically wound wire elements 408 which define a tubular body portion 403 with first and second ends 402, 404. The crossing wire elements 408 of the body section 403 form a body pitch angle 401 which is preferably less than or equal to 90°; and preferably in the 70° to 90° range.

(Pinchuk, column 6, lines 50-57) (emphasis added).

Pinchuk specifically describes the term “pitch angle” (PA) as referring to the longitudinally extending angle between wire crossings. (Pinchuk, column 1, lines 46-53; Fig. 1).

The stent 400 includes a second braided portion or locking ring 414 at one end of the stent 400 formed from stent wires 408 with a braiding angle of 140° to 180°, as follows:

At the second end 404, the crossing elements 408 form a second end pitch angle 412 which is typically greater than 90° and preferably in the 140° to 180° range, and which results in a locking ring 414. (Pinchuk, column 6, lines 57-60) (emphasis added).

The stent may include two locking rings with each being disposed at the opposed ends of the stent. (see e.g., Pinchuk Fig. 6).

Thus, Pinchuk clearly describes a stent having one braided portion with only acutely longitudinally extending filament crossing angles and a second braided portion with only obtusely longitudinally extending filament crossing angles.

In contrast, independent claims 6, 76 and 84 are directed to stents having different obtusely braided portions. Since Pinchuk fails to disclose a stent having all obtusely braided portions, independent claims 1, 6, 76 and 93 are patentably distinct over Pinchuk. Further, Pinchuk fails to disclose that its braiding wire may comprise different numbers of filaments as set forth in independent claim 25. Thus, claim 25 is patentably distinct over Pinchuk.

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Further, the examiner may not properly pick and choose at will between longitudinally and/or circumferentially extending angles among proximal or adjacent braided filaments. Pinchuk specifically its pitch angle as being not only acute, but also being the angle extending in the longitudinal axis of its stent.

Furthermore, the subject specification also specifically defines "strand crossing angles" as those angles extending along the longitudinal axis of the stent, as follows:

Stent 26 consists of an alternating sequence of segments 30 in which the strands form a crossing angle of 150 degrees, and segments 32 in which the strands define a crossing angle of 130 degrees. The strand crossing angle or braid angle is conveniently thought of as an angle bisected by a plane incorporating a longitudinal central axis of the stent, i.e. a horizontal axis as viewed in Figure 4. The pitch angle is the angle at which the strands are wound with respect to a plane normal to the axis. Thus, the pitch angles of segments 30 and 32 are 15 degrees and 25 degrees, respectively. In Figure 4a, "p" indicates the pitch angle and " α " indicates the strand crossing angle. (Specification at page 11, first full paragraph) (emphasis added).

Thus, the subject specification specifically defines "strand crossing angles" as those angles extending along the longitudinal axis of the stent. Accordingly, the examiner may not ignore the specific definitions of the subject specification in an attempt to formulate the Section 102 rejections. In other words, Pinchuk clearly discloses a stent having a middle portion with only acute crossing angles in the longitudinal direction, and the claims of the subject application are directed to, *inter alia*, only obtuse crossing angles in the longitudinal direction. Any attempt by the examiner to formulate "strand crossing angles" as referring to either circumferentially and/or longitudinally extending angles is in direct contrast to the specific teachings and definitions of the subject application. Thus, the examiner may not properly ignore the specific definitions of the claimed elements of the subject claims in an attempt to present the Section 102 rejections.

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Therefore, reconsideration and withdrawal of the rejection of claims 6 and 76-93 are under 35 U.S.C. §102(b) are respectfully requested.

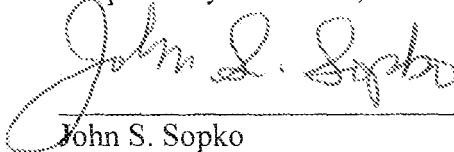
Summary

Therefore, Applicants respectfully submit that independent claims 6, 76 and 84, and all claims dependent therefrom, are patentably distinct. This application is believed to be in condition for allowance. Favorable action thereon is therefore respectfully solicited.

Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned attorney at the telephone number given below.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461. Such authorization includes authorization to charge fees for extensions of time, if any, under 37 C.F.R. § 1.17 and also should be treated as a constructive petition for an extension of time in this reply or any future reply pursuant to 37 C.F.R. § 1.136.

Respectfully submitted,



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